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ABSTRACT

Advocating preschool children's introduction to microcomputers, this document describes the advantages of computer learning for the child, academic skills that can be taught, results of an experiment that field tested microcomputers in a nursery school, and guidelines for parents to use when selecting software for their children. An introductory section discusses the advantages of computer learning, including increased motivation to learn, heightened feelings of self-esteem and of being in control, and the availability of programs at all skill levels. The next section describes computer software that teaches logic and pre-reading, pre-mathematics, and problem-solving skills. In the field test discussed in the next section, a microcomputer learning station was created in 1981 in the Bing Nursery School, a laboratory facility of Stanford University. Ann McCormick Piestrup integrated free-choice computer activities into the curriculum for fifty 3- and 4-year-old children. Among other results, the field test showed that microcomputers can be a successful tool for teaching both specific pre-reading concepts and computer literacy skills and that computer learning is attractive to both boys and girls. The final section lists many suggestions for parents evaluating software for children. It is emphasized that materials should enhance the child's sense of competence and self-esteem and that the computer should be freely chosen from among many activities. (CB)

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Computers for the Preschool:

Beyond the Basics

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INTRODUCTION

When most people think of "computers" they conjure up pictures of video games, or wonder at the enormous impact that personal computers are having on home and business. But did you know that microcomputers have made their way into the lives of children three, four, and five years old? Today's preschoolers are likely to play "house" with new roles: "Pac-Daddy," "Pac-Mommy," and "Pac-Baby." Instead of equipping their pretend "office" with desks and typewriters, they may instead build "computers" out of wooden blocks. The microcomputer has a place now in the educational options for very young children.

Familiarity with computer hardware, software, and the "jargon" of microcomputers may give children a head start in the many computer-based activities they are likely to encounter in their lives. Children need a balanced curriculum with many choices. Computers--whether at school or in the home--can give your child a new and exciting option for learning, and allow for the exploration of fresh concepts and ideas.

The use of computers can be a tremendously motivating experience for your child. Children seem naturally drawn to computer learning; if their experience with the computer is an interactive one, they will be motivated to focus, increase their attention span, and develop important cognitive skills. Colorful, interactive software is available for children as young as three that can help preschoolers gain pre-reading, pre-math, logic, and problem-solving skills. Music, color, and engaging graphics all combine to increase your child's ability to focus on and attend to new learning material.

Children who can feel <u>in control</u> of the computer gain a tremendous sense of self-satisfaction and personal success. When a three or four year old child is able to load the disk drive, turn on the computer, disk drive, and T.V. monitor, that child feels real <u>power</u>. Something that preschoolers often lack in a world of grown-ups! Motivation and self-esteem are both critical

in determining whether your child will be ready for Kindergarten. A youngster who feels good about herself is more willing to take risks and approach new physical, social, and intellectual challenges. It's like a child who has a whole pile of poker chips versus a child who has just one. The child with many is more willing to take risks or "play her chips." The child with just one chip guards it carefully; she is afraid to "play" or take a chance for fear of losing everything. The computer can be an aid in helping children to have a positive, successful educational experience.

Children can enter into a "friendly" relationship with the computer, and their learning is reinforced with immediate feedback. Computers give children their undivided attention, and have infinite patience!--something difficult for parents and teachers to achieve. Children feel good about taking charge of their own learning. With the computer they can take on the role of "teacher"; the child can give the computer commands, and then make choices about the game or activity they want to play. Programs are designed for children of all skill levels, so that every child can gain concepts and experience success.

It is important for preschool children to take an active role in their own learning, just as they begin to assert their independence in other ways. The computer should always be a choice for your child, balanced by the many other activities he or she needs for healthy physical and mental growth. As an option, computer learning can offer even very young children exciting new ways to gain concepts and build cognitive skills.

PRESCHOOL SKILLS - INTRODUCTION

There are important cognitive or "mental" skills that your child needs in order to be ready for Kindergarten. Before a child can learn to read or do simple mathematics, she must have developed a firm foundation of "pre-reading," "pre-math," and problem-solving or "logic" skills. Just as your baby had to crawl before she could take her first steps, so too must she learn to "play" with the shapes that make up letters and numbers before she can recognize the alphabet or numerals from one to ten. The young child first learns to deal with concrete and tangible materials, and then later with the manipulation of the symbols that represent them.

The computer can help your child with pre-reading and pre-math skills by allowing her to experiment with shapes, colors, letters, and numbers. A child who has had meaningful experiences with symbols will be one who can later more easily understand that when you put C, A, and T together, it spells "CAT"! By allowing your child to explore the letters and numbers of the computer keyboard, you are giving her practice in discriminating, or picking out, all the symbols that she will be manipulating for the next few busy years as she learns to read and do simple math! A child as young as three can pick out specific letters on the keyboard, and will be adamant about locating them on her own. As one little boy said, "Don't tell me! I know it's here somewhere!"

Pre-Reading Skills

One of the first things that your child must have to get ready for reading is a good grasp of spatial concepts--"above" and "below," "left" and "right." Children must be able to always orient to the left-hand side of the paper or chalkboard to begin reading or writing. They must also be able to distinguish "upper" from "lower" or "above" from "below." When the Kindergarten or first grade teacher tells children, "Start at the upper, left corner of your paper and put your pencil above the line," young students can be easily confused by all

these abstract directions. The activity of drawing shapes or printing letters and numbers may seem simple, but the "direction" words the teacher uses are not.

The computer can help children gain these abstract concepts and learn to follow directions with interactive games designed to be both visually interesting and cognitively stimulating. A program such as The Learning Company's Juggles' Rainbow teaches children relational concepts of "left/right" and "above/below" using playful, colorful graphics and cheerful melodies. In one of the games ("Juggles' Rainbow") children press keys "above" a blue strip to form cycling rainbow colors, and "below" to watch dancing rain appear. In "Juggles' Butterfly," a butterfly with changing colors on its wings serves to illustrate concepts of "left" and "right." In a related program called Juggles' House, children work with the spatial concepts of "inside" and "outside" as the computer forms a house and garden filled with delightful characters.

The position of the computer keyboard and monitor screen also gives children experience with relating a horizontal plane (the keyboard) to a vertical plane (the screen). In school, children will need to be able to do this as they relate their flat desk surface (horizontal) to a chalkboard (a vertical plane). Very young preschoolers have difficulty relating what they do on the keyboard ("I push an A") to what appears on the computer screen. With experience, however, children delight in the discovery of what they can do--"I made an A!"--once they have made the connection between a keypress and an effect on the screen.

The more familiar children can become with the lines and curves that make up the shapes of letters in the alphabet, the easier it will be for them when it comes time for reading. Every parent knows how children delight in finding the letters of their name in the newspaper print, or reading the big letters on the red "STOP" sign. These kinds of first-hand experiences with letters or

"symbols" are excellent for pre-reading youngsters. Make identifying shapes, colors, and letters a part of your everyday life, because a child who feels comfortable with them will move naturally into learning to read.

Allowing your child to simply explore the keyboard of the computer is an excellent way to give her experience with distinguishing letters that look alike and remembering letters' appearance. An "E" looks very much like an "F," and it's hard to tell a "b" from a "d" when you're four years old! Spinnaker's Kindercomp includes a game called "Scribble" where children press a single letter (or any other symbol) and get an entire colorful row of that letter printed across the screen!

Being able to distinguish shapes and letters that look alike is called "visual discrimination" and it is an important pre-reading skill. Computer games that have children match patterns or tell "What's different?" are good for developing observational skills. In Kindercomp's "match" game, a pattern appears on the screen ( ), and children must then pick a match from among three very similar patterns ( ).

TLC's Moptown is another program that encourages children to look closely in order to distinguish specific attributes (tall or short, fat or thin, red or blue) of two characters which are "Bibbit" or "Gribbit." The first games challenge young children to make a Moptown twin, find who is different at a Moptown house, or line up a Moptown parade. By using nonsense symbols with specific traits, children are encouraged to observe in increasing detail and decide how to make a "match."

In one of the "Juggles'" games (from Juggles' Rainbow), children must combine spatial concepts with visual discrimination. The computer introduces children to the four hardest letters of the alphabet: lower case "b," "d," "p," and "q." Children find these letters difficult to distinguish since their "tails" point in four different directions. This program lets preschoolers

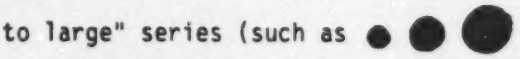
explore the lines and circles that make up these letters by arranging the "tails" in four quadrants ("above/right" for the letter "d," etc.).

Once children become familiar with the letters that make up the alphabet, they can begin to learn the sounds or "phonics" that go along with the letters. Learning to read involves both a good "sight vocabulary" (knowing letters and simple words by sight alone) and the ability to put sounds together to form words. Computer programs actually emphasize phonics in the way certain keys are used to give program directions: "F" for "fill," "S" for "stop," "Q" for "quit," etc. Even if children do not initially make the connection between letters and sounds, by using these commands over and over, they will remember the letter and begin to use it with the word it represents--"I'll push S for Stop" or "Y is for Yes." Even very young children can easily follow directions to locate the "Y" or "N" to respond to a Yes/No computer question. Programs such as My 1st Alphabet emphasize pre-reading skills in a fun and creative way. When a child types a letter, the computer responds with a picture illustrating that beginning sound: type "A" and "AN AIRPLANE" will appear on the screen. The child must then relocate and press the same key on the keyboard to receive a musical reward.

Children can also increase their "fine motor" skills by learning to accurately press the keys of the computer keyboard. Using a joystick or paddles will also give your child the practice he needs to later handle a pen or pencil with good manual control. You may even find that your child will naturally orient his left hand to the left side of the keyboard, and right hand to right side! Fine motor skills and good left/right orientation are important concepts for pre-reading youngsters. Computer programs should always move graphic displays from left to right.

Pre-Math Skills

Many of the skills that your child needs to acquire for pre-reading are also important for developing a good grasp of pre-math concepts. Children must have a clear understanding of spatial or relational opposite: "above" and "below," "left" and "right." To begin counting, ordering, and measuring using numbers or symbols, your child must understand numerical "position." He needs to look to the left side of a series or sequence. Similarly, he must be able to recognize the "first" object as the one on the left, and the "last" object as the one on the right.

When presented with a "small to large" series (such as ), parents wonder why their young preschooler chooses the "big" circle when asked to identify the "first" one. Children learn gradually, in a series of developmental stages or steps. They need lots of practice dealing with new concepts. Computer programs such as Juggles' Rainbow give them experience working with relational concepts in a fun and educational way. Children are also encouraged to count in this program as the "rainbow" and "butterfuly" patterns cycle through color position changes with each keypress.

Children must also be able to observe symbols in increasing detail and look for similarities and differences. In order to recognize the difference between the shape of a "2", a "3", and a "5," children must be familiar with the lines and curves that make up these shapes. Programs like Moptown or Kindercomp that give children practice with recognizing "same" and "different" patterns are good for developing visual discrimination.

Once children begin writing numbers on their own, they often reverse the direction of the numerals. For example, a "7" will come out " ." This is very common, and shows that children attend to the shape of a letter or number before they notice the direction it faces. Lots of visual experience with number symbols will help children recognize correct shape and direction. In a program

such as My 1st Alphabet, where numbers appear in bold graphics on the screen, it may help to trace the number with your child's finger and encourage him to do this on his own.

Preschoolers need to be able to understand "quantity" and relate amount to a specific numeral. That is, a child who can count to ten may not yet understand that "6" stands for six distinct objects. A program like My 1st Alphabet encourages children to count the number of smiling clowns and can help kids make the connection between amount and number. In this game, children must pick the number of clowns with a smile from among an array of nine--some smiling, some frowning. Children use observation and discrimination skills as well! When kids correctly count the number of smiling clowns on the screen, they are developing "one-to-one correspondence"; they are learning to match every object with a number.

Older preschoolers (4 and 5 years old) will enjoy the challenge of number games that introduce number sequences, number lines, plots, graphs, and even beginning geometry. In Kindercomp's "Sequence" game, children are presented with five numbers in numerical order and must fill in the next number: "12 13 14 15 16 __," for example. Bumble Games (a TLC product) introduces children to number lines with positive numbers and teaches them how to plot number pairs on grids. Kids gain experience with mapping or plotting locations on a graph using (X,Y) coordinates as they try to find the hidden "Bumble." Children must use concepts of "greater than" and "less than" also represented by " → " and " ← " for non-readers. Exciting and mentally stimulating activities for a young child!

As children learn to plot points and lines on grids, they are actually acquiring early concepts of geometry. Children can discover for themselves that dots and lines combine to form geometric shapes! In "Bumbledot" (from Bumble Games), children make dot-to-dot pictures by locating points on a graph.

They may use pre-set patterns or make up their own pictures. Children can also gain geometric concepts by creating their own colorful, graphic computer art. Programs such as Kindercomp's "Draw" are easy for even very young children to use, and the results are exciting. Children make colorful drawings of their own, using a joystick or the computer keyboard; they can choose whether to draw in "thick blocks" or "thin lines" and make their picture change color or blink. Preschoolers enjoy seeing their own geometric designs displayed in vivid color on the computer monitor!

Logic and Problem-Solving

The home personal computer is especially suited to providing children with new and exciting challenges in logical thinking and creative problem-solving. Many programs designed to teach children pre-math skills also lead to the development of ordered, logical thinking. Computer software can help children gain spatial concepts, and encourage ordering or sequencing skills. Children must also be able to recognize patterns ("same" or "different") and analyze them closely to discriminate specific attributes ("tall or thin," etc.). All of these concepts are important tools for children to use in developing logic and problem-solving skills.

The Learning Company's Moptown requires children to use logic in determining how to change or match "Moptown" characters. Children must decide whether characters are "Bibbit" or "Gribbit," and then follow rules to guess who can join the Moptown Clubhouse or enter the moppet hotel. Such programs encourage children to develop the reasoning skills necessary for creative problem-solving through pattern recognition and visual discrimination.

Other programs introduce children to beginning computer programming. Preschoolers can begin to build an understanding of procedural thinking, and learn to use the "step-by-step" approach necessary for elementary programming. Delta Draw (a Spinnaker product) allows children to create their own colorful drawings,

and kids learn to plan or "program" their own graphic designs using simple, single-key commands. Children can experiment with cause and effect, observing how their input through keyboard or joystick results in exciting, colorful graphic displays. Their interaction with the microcomputer is an active rather than a passive one; children enjoy seeing their ideas instantly translated into "computer art."

Computer programs in which children are encouraged to make inferences and test hypotheses also build problem-solving skills. When young children must try new approaches to problems or take mental risks, they are expanding their ability to reason and think logically. Children can use a program such as Juggles' Rainbow on many intellectual levels. While children learn simple spatial concepts, they also test hypotheses about how to manipulate the position of colors in cycling "rain" and "rainbow" patterns. Color bands move one space with each keypress, so children experiment with being able to "match" color patterns above and below a blue line. As children try to predict pattern changes, they are actually using inductive thinking--an important skill for creative problem-solving.

First-hand experience with microcomputer hardware and software reinforces logical and sequential thinking for young children. Children must learn how to turn on the disk drive, computer, and T.V. or monitor in a specific order. They need to listen to adult instructions and then follow directions, both important readiness skills for Kindergarten. Even three year old children can be taught to hold diskettes properly and load the disk drive. They seem to understand that the computer needs time to "think" as information coded on the disk is transferred between disk drive and computer terminal. The use of correct computer terminology--"The program is loading so we must wait for the red 'Busy' light to go off"--also encourages logical thinking. Operating computer machinery can be a good memory task for young children. Ask them to tell you how to open

the disk drive door, or when it is time to load the diskette. Children seem to take computers very seriously, and treat them with respect. After covering the computer, one little girl leaned over and said, "Night night, Computer!" and gave the machine a kiss!

BING NURSERY SCHOOL FIELDTEST

The use of microcomputers with preschool children at actual school sites has shown that computers can be a powerful learning tool for children as young as three. Pioneering fieldtesting of educational software was performed in 1981 at Stanford University's Bing Nursery School, under the direction of Dr. Ann McCormick Piestrup. When her own daughter was two years old, Dr. Piestrup became interested in what children could do with low-cost microcomputers. Her work in designing colorful, interactive software that was "playful, success-oriented, and presented information in manageable bits" led to the foundation of what is now The Learning Company, Portola Valley, California.

Bing School provides a laboratory facility for the Psychology Department of Stanford University, and has been the setting for research on child development known throughout the world. Bing's enrollment is open to all, so that children come from Stanford's faculty and student families as well as the surrounding community. The school environment, both indoors and outdoors, is carefully planned by teachers to reflect the cognitive, physical, and emotional needs of young children. The curriculum offers a balance of free-choice play and directed group times with activities in creative arts, dramatic play, science and nature, language arts, blocks, manipulative toys, music, and large muscle skills.

During Piestrup's fieldtesting, the computer was set up in a Bing classroom as an interest center. It was available to children during indoor free-choice play and turns were given on a "first come, first served" basis. The computer choice was balanced with painting, block building, and other regular nursery school activities. Fifty children aged three and four years old, took part in the first test--including Ann Piestrup's daughter, Sarah, a Bing veteran! The initial test program used color graphics, music, and digitized voice to present reading-readiness concepts: "above/below" and "left/right." Parents at Bing felt privileged to have computers at school for their children, and

welcomed the opportunity for their youngsters to become familiar with microcomputers.

The purpose of Dr. Piestrup's fieldtest was to determine:

1. whether using a microcomputer in a preschool classroom was feasible;
2. whether children were able to move through the lesson sequence easily;
3. whether children learn concepts of above, below, left, and right;
4. whether children gain in "computer literacy" (can they use computer terms, load diskettes, and operate equipment);
5. how girls versus boys approach the computer; and
6. whether the program was interesting to children and in use when available.

Piestrup found that the computer was workable within the classroom, and that children were eager and excited to have turns. So many children wanted to play that turns were limited to five minutes and waiting lists were set up. "Can we use the computer today?" children asked, or as one little boy put it, "I want to go and press those keys!" Teachers were pleased that children continued to seek out social contacts, and wanted to share their discoveries with other people. Children brought friends for shared turns; they talked with teachers and other children about what they were doing; they drew pictures and sang songs related to the learning material. Children alternated keypresses for joint creations, and played color matching and guessing games. Seldom was a child alone at the computer. Usually there was at least one "watcher" to share ideas, observe quietly, or offer encouragement. Four year old children would give help to the three year olds: "You're going to make a butterfly! You got it to match!"

Preschoolers in the Bing pilot study were tested to see if they were learning the spatial concepts. Dr. Piestrup found that about <u>twice</u> as many children passed right/left, above/below concept tests <u>after</u> using the programs than had before using them.

Children were able to integrate spatial concept learning into their own experiences. Two to three months after the left/right fieldtest, one little girl was sitting at snack when a teacher asked her, "Which is your right hand?" Katie turned her body towards where the computer table had been located during the fieldtest. "This one," she said, holding up her right hand. "Why did you face the table?" her teacher asked. "Silly, that's where the computer was!" she replied.

Many children spontaneously use their left hand to type keys on the left side of the keyboard, and right hand to type keys on the right side. One little girl playing Juggles' Butterfly moved her right hand to the left side of the keyboard, looked up at the butterfuly pattern on the computer screen, and then placed her hand back on the "right" side! This example clearly shows the power of spatial concept learning through computer graphics.

At the preschool level, Dr. Piestrup's testing showed boys and girls to be equally interested in using the computer. At Bing, there was no sense that the computer was a "boy" thing, although children of this age do have clear-cut ideas about "boy" and "girl" activities! Generally a woman monitored the computer in the Bing classroom. However, when a male researcher used the computer with children, primarily little boys asked for turns and stayed on to observe, while few girls participated.

The Apple II computer and above/below and left/right programs proved to be effective learning tools at Bing Nursery School. The pilot study suggests that even children as young as three years can use computers easily and gain in skills. With the computer as a regular part of the Bing classroom, children accept it naturally as another learning choice. "Since computers are likely to be such an important part of their world, preschool does not seem to be too soon to introduce children to playful, interactive computer experiences," says Dr. Piestrup.

Bing continues to be a fieldtest site for The Learning Company. The children at Bing have had the opportunity to use the Apple II, the Atari 800 and 400, and the IBM Personal Computer. Computer learning has been comfortably integrated into the general nursery school curriculum.

PARENT GUIDELINES FOR EVALUATING SOFTWARE

Selecting educational software for your child is an important, but difficult task for many parents. There are certain considerations you need to keep in mind in order to provide your preschool child with a positive and enriching computer experience. First of all, consider your own child's needs, capabilities, and interests. Be sure that program material is at a level where your child can be successful. Software intended for older children will only be frustrating and confusing for your preschooler. A sense of competence and self-esteem are critical for children's success in school at all levels.

Programs should be of moderate difficulty with built-in, progressive intellectual challenges. Material must be presented in a clear and logical manner. After a few trials, children should be able to operate programs independently. For best results, computer program commands should be limited to easy, single-keypress directions: "C" for clear, "D" for draw, etc.

Gerald H. Block. Ph.D., Editor-in-Chief of the "Computers, Reading and Language Arts" Journal (CRLA) has composed a list of specific guidelines for evaluating educational software. He recommends that supporting literature which accompanies software should define the "educational goals" of the program. Programs should then offer learning challenges that achieve these goals for children.

Look for software with "staying power," says Gordon Davidson, father of a four year old girl. Good software should motivate and hold the attention of your child even after repeated use, while still provided a rewarding learning experience. Play is the basic ingredient of children's learning, and computer education should be designed with this in mind. When children use quality educational software, they become so involved that learning is more like play than work. For example, in TLC's Juggles' Rainbow, children delight in being able to form a multi-colored rainbow and dancing rain; while at the same time gaining pre-reading concepts of "above" and "below."

"Chidren enjoy games that promote learning and creative thinking through the playful nature of the software," advises Charlene Margot, a teacher at Stanford University's Bing Nursery School. Computer graphics, music, and color should clarify program concepts and enhance learning. A home computer system used with children should include a color T.V. or monitor to utilize color graphics.

When children have control over their own learning and can feel a sense of task mastery, their self-esteem is enhanced. Educational software should be success-oriented; programs should not allow for failure. Even three year old youngsters can operate microcomputer hardware easily--they can load a disk drive and turn on the computer and T.V. monitor. After some adult instruction and guidance, preschoolers should be able to operate programs on their own and achieve positive results. This contributes to a child's high self-esteem, the most important quality needed for a successful school experience, according to Bing teacher, Nancy Armstrong.

Programs designed for preschoolers should have instructions a child can learn quickly, and should be easy to begin and end. Inappropriate responses should get helpful feedback, not offensive responses, recommends CRLA editor, Gerald H. Block. Spinnakers' Kindercomp program uses a smiling face for correct responses, with a gentle frown and teardrop for incorrect responses.

Software for very young children needs to be interactive. Preschoolers like to make things happen and feel that they can affect their environments. Programming designed to involve children in their own learning can challenge their thinking in new ways and lead to fresh intellectual discoveries. With interactive software, children "take control"; they don't just watch a show on the computer. Children are inquisitive and want to see immediate, visible consequences for everything they try. This interaction makes a child's computer experience very different from watching television. Children learn by doing!

When the computer becomes a playful "partner," a child's educational experience is enriched.

The kinds of experiences we offer young children are important for their growth and development. Parents should decide what they want their own children to gain from using computers in the home. As a parent and educational researcher, Ann Piestrup, founder and chairman of TLC, had the needs of her own preschool daughter in mind when she designed her first learning games:

> I wanted my child to use the computer playfully, not to wait for it to do time-consuming tricks between keypresses. I wanted her to have time to think about what was happening, not to be defeated by little flying balls on the screen. I wanted her to have surprises, to discover things experimentally. I wanted her computer experience to resemble sandbox play, not a game arcade or old teaching machine. I wanted the computer to generate consequences to her actions, but not beep and flash, "WRONG! YOU LOSE!" I wanted the computer's messages to be as considerate as those of her nursery school teachers.

Computers give children their full attention and respond quickly. Programs that are self-pacing let children make decisions about the rate of their own learning. As one little boy sitting quietly before the computer said, "Wait ... I'm thinking!" Preschoolers need plenty of time to collect and organize their thoughts. No parent needs to be reminded how impossible it is to rush a stubborn four year old determined to dress himself! The computer is infinitely patient, which makes it a valuable learning tool for very young children. Choose software that allows your child to move at her own speed, play a game many times over, or move on to a new task independently. When purchasing software, look for a retailer that allows you and your child to <u>preview</u> a demonstration disk.

The computer should always be a <u>choice</u>; one of many activities which balance your child's growth. It is not a replacement for parent contact or involvement! Your child may be able to play independently at the computer after you supervise her in getting started. You may also enjoy playing along <u>with</u> your child, taking

turns and sharing in the excitement of the computer. Gordon Davidson, an attorney in the San Francisco Bay Area, sometimes uses the computer with his four year old daughter, Laurie, as a "special time" for 15-20 minutes before bed. They enjoy one another's company, and computer learning becomes a very personal, playful activity.

Young children are naturally curious and eager to learn; they can accept new ideas and come up with unique solutions to problems on their own. Every day brings new "Aha!" discoveries, and computer learning can present children with fresh concepts to encourage creative thinking and build cognitive skills. By offering selective, thoughtful computer software, parents can bring preschool learning into the home.